

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
25 September 2003 (25.09.2003)

PCT

(10) International Publication Number
WO 03/079029 A1(51) International Patent Classification⁷: G01N 35/02

(21) International Application Number: PCT/US03/07724

(22) International Filing Date: 11 March 2003 (11.03.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/095,907 11 March 2002 (11.03.2002) US(71) Applicant (for all designated States except US): **DIVERSA CORPORATION** [US/US]; 4955 Directors Place, San Diego, CA 92121 (US).

(72) Inventor; and

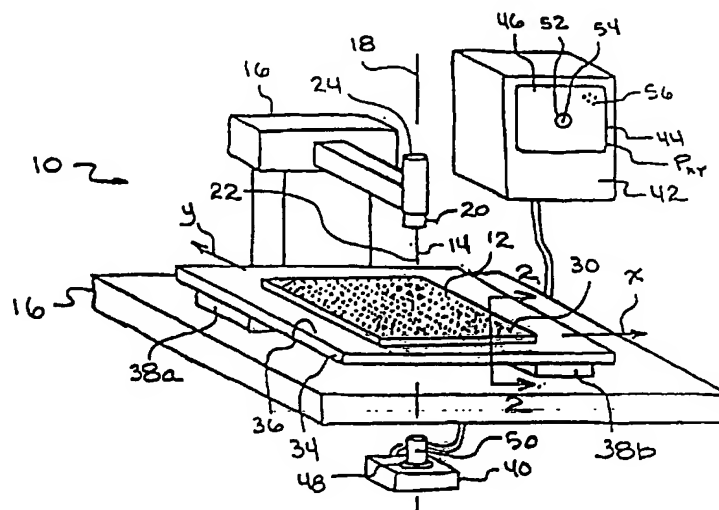
(75) Inventor/Applicant (for US only): **LAFFERTY, William, Michael** [US/US]; 1456 Sanford Lane, Encinitas, CA 92024 (US).(74) Agent: **NOVOM, Antony, M.**; Diversa Corporation, 4955 Directors Place, San Diego, CA 92121 (US).(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: POSITIONING SYSTEM FOR MOVING A SELECTED STATION OF A HOLDING PLATE TO A PREDETERMINED LOCATION FOR INTERACTION WITH A PROBE



(57) Abstract: A device for positioning the tip of an elongated probe (14) at a selected station of a holding plate (12) includes motors to move the holding plate and a supporting stage within a coordinate plane (m_{xy}). The elongated probe is also movable along a linear probe axis that is orientated normal to the coordinate plane (m_{xy}). A camera creates a pixel image of an optical marker placed on the stage. The image defines a coordinate plane (p_{xy}). To relate the coordinate plane (p_{xy}) to the coordinate plane (m_{xy}), the optical marker is moved to successive locations in the m_{xy} plane and a pixel image is obtained at each location. Using the pixel images, a computer calculates the relationship between coordinate planes and uses the relationship to signal the motors to move the holding plate in the m_{xy} plane and position the selected station on the probe axis for interaction with the probe.